

REMARKS

The Office Action dated May 15, 2009 and cited references have been carefully reviewed. In the Office Action, claims 1-14 and 16-22 were pending and rejected. The Applicant thanks the Examiner for taking time to discuss some claimed features, which are distinguishable from the cited references with the Applicant's attorney during the telephone interview on May 27, 2009. During the interview, independent claims 1, 17 and 20 and cited references were discussed. Specifically, the Applicant's attorney pointed out that none of the references cited by the Examiner, including the Williams reference, discloses a recovery chamber, which separates fine particles from air and includes a fine particles outlet and a dedusted air outlet. the Examiner indicated that the Examiner now understands the distinguishable features of the present invention better, and requested that the Applicant prepare a Response to the Office Action reiterating the features discussed. Therefore, the Applicant hereby prepares this Response including the distinguishable features discussed with the Examiner. If, after reviewing this Response, the Examiner thinks that another telephone interview can facilitate the prosecution, please call the undersigned attorney. The Applicant respectfully requests reconsideration and indication of allowability of claims 1-14 and 16-22 in view following remarks.

The Examiner rejected claims 1-14 and 16-22¹ under 35 U.S.C. § 103(a) as being unpatentable over Hanke (US 4,869,786) in view of Weit (US 5,232,096) and further in view of Williams (US 5,091,077). The Applicant has carefully reviewed the cited references and the Examiner's application thereof, but must respectfully traverse this ground of rejection.

To establish a *prima facie* case of obviousness, there must be "a reason that would have prompted a person of ordinary skill in the relevant field to combine elements in the way the claimed new invention does." *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741. Further, the proposed modification that would improperly "render the prior art as unsatisfactory for its intended purpose" is forbidden under MPEP §2143.01. In this case, the Applicant submits that there is no reason that would have prompted a person of ordinary skill in the art to combine elements of Hanke, Weit and Williams in the way the Examiner suggested. Further, the modification suggested by the Examiner would render the system of Hanke unsatisfactory for its intended purpose, as discussed in detail below.

¹ The Examiner erroneously stated claims 1-14 and 16-18 were pending and rejected on the Office Action Summary page. The Applicant assumes this was a typographical error since the Examiner stated "[r]eferring to claims 1-14 and 16-22" under "Claim Rejections under 35 USC § 103" at page 2.

In rejecting claims 1-14 and 16-22, the Examiner admitted that Hanke fails to teach "the recovery chamber [] adapted to use the vortex created by the rotary cage for cycloning said material or [] the recovery chamber separat[ing] fine particles from air." Then, the Examiner argued that Williams and Weit cure these deficiencies.

The Hanke system teaches a multi-stage air classification system for classifying fine powder. Specifically, Hanke states in column 3, lines 16-18, "[t]he inventive process and corresponding apparatus are therefore particularly suitable for **upper particle size limits below 10 μ m.**" (Emphasis added.) Further, Hanke states in column 3, lines 20-23, "the small installation surface achieved by **the vertical multistage nature** of the inventive air classifier **is favorable** to a use with cyclones." (Emphasis added.) Hanke also explains that "an essential basic principle of the present invention is to improve classifying and separating efficiency through performing a multistage classification . . . this aim is achieved in that **in addition to a dispersion of the coarse material resulting from the first process stage, there is a second classification operation by centrifugal rejection.**" Hanke at column 2, lines 56-66. (Emphasis added.)

On the other hand, Williams teaches a waste separating system having a horizontal configuration. The system of Williams does not include a centrifuging device, rather it includes a rotating trommel and an auger for transferring and separating bulk waste materials such as glass, bottles, heavy plastic PVC material and metal containers. *See Williams* at column 3, lines 25-42. Further, the chamber 15 of Williams, which was called out by the Examiner as the equivalent structure to the recovery chamber to be combined with the classifying chamber 1 of Hanke, has an opening on the side, wherein the horizontally configured trommel 11 is operatively connected. Thus, the classifying chamber 1 of Hanke, which is vertically configured, cannot be operatively connected to the chamber space 15 of Williams.

Further, even if the classifying chamber 1 of Hanke and the chamber 15 of Williams were some how connected, *arguendo*, such modification will render the Hanke system unsatisfactory for its intended purpose to improve powder classification process by providing a second particle size classification step via a second centrifugal basket, since the Williams' chamber 15 does not include a centrifugal basket or perform a powder classification operation. Specifically, Williams states in column 3, lines 60-64, "air flow enters a chamber where the waste material that is sensitive to air flow is allowed to drop out of the air stream,

while the air continues on to a bag house for removal of any entrained fines before the air is exhausted to the outside." Therefore, if the powder particles mixed with air from the classifying chamber 1 were fed into the chamber 15, the powder particles and air would just pass through the chamber 15 into the bag house, without any particle classification performed in the chamber 15.

Therefore, there is no reason that would have prompted a person of ordinary skill in the art to combine the classifying chamber 1 of the Hanke's multistage powder classification system with the chamber 15 of the Williams' waste separating system, as suggested by the Examiner, to render claims 1-14 and 16-22 obvious. Reconsideration and indication of the allowability of claims 1-14 and 16-22 are respectfully solicited.

Further, even if Hanke, Weit and Williams were combined as suggested by the Examiner, *arguendo*, the combination fails to teach or suggest all limitations of claims 1-14 and 16-22.

When determining whether a claim is obvious, an examiner must make "a searching comparison of the claimed invention – **including all its limitations** – with the teaching of the prior art." *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (Emphasis added). Thus, "obviousness requires a suggestion of all limitations in a claim." *FMT, Inc. v Yieldup Intern. Corp*, 349 F.3d 1333, 1342 (Fed. Cir. 2003).

Independent claim 1 requires "said **recovery chamber (2) coaxially arranged in a protrusion of the rotary cage (1)**, the recovery chamber (2) adapted to use the vortex created by the rotary cage for cycloning the fine particles mixed with air and **separating the fine particles from air**; and said recovery chamber (2) including a fine particles outlet and an air outlet, wherein the **fine particles separated from air exit through the fine particles outlet and a dedusted air exits through the air outlet**." (Emphasis added.)

As discussed above, the Examiner called out the chamber 15 of Williams as the equivalent structure to the claimed recovery chamber. However, as discussed above, the inlet opening of the chamber 15 is located on a side wall of the chamber 15, and thus, cannot be "coaxially arranged" with the classifying chamber 1². Further, the chamber 15 does not

² The axis of the recovery chamber would not even pass through the opening wherein the classifying chamber is connected in the modified system as suggested by the Examiner. In fact, the axis of the recovery chamber and the axis of the classifying chamber would perpendicularly cross each other.

separate the fine particles from air, and does not include a fine particle outlet and an air outlet as required in claim 1. Specifically, Williams states in column 2, lines 25-30, "[t]he chamber space 15 is provided with an air exhaust conduit 18 connected to a bag house 19 for the collection of fine solid material that may be drawn into the air flow to the bag house by the action of the air exhaust blower 20 connected by the conduit 21 to the bag house 19." Then, in column 3, lines 62-65, Williams states "the air continues on to a bag house for removal of any entrained fines before the air is exhausted to the outside." As quoted above, fine particles are separated from air in the bag house 19, not in the chamber 15, as suggested by the Examiner.

In referencing Weit, the Examiner stated "Weit discloses . . . a recovery chamber adapted to use the vortex created by the rotary cage and wherein the rotary chamber comprises opening allowing passage of the material toward ducts for collecting the material outside the chamber (See at least Fig. 1)." Weit discloses a material dispersion system including a classifier basket 4 and a fine material outlet 26. However, as shown in Fig. 1, the fine material outlet 26 only has one outlet, through which the fine material mixed with air exit. The fine material outlet 26 is not a recovery system that separates the fine particles from air and does not include a fine particle outlet and an air outlet for separate exit of the fine particles and the dedusted air as required in claim 1. Reconsideration and indication of the allowability of claim 1 and its dependent claims 2-13 and 16-19 in view of the above remarks are respectfully requested.

Independent claim 20 recites, *inter alia*, " a recovery chamber vertically arranged under the rotary cage . . . wherein the recovery chamber includes a fine particle outlet and an air outlet, the fine particle outlet coaxially arranged with the air outlet, wherein the fine particle outlet circumscribes the outer periphery of the air outlet, wherein the fine particles separated from air is recovered through the fine particle outlet and a dedusted air exit through the air outlet." As discussed above at length with regard to claim 1, Hanke, Weit and Williams, on their own or combined, do not teach the recovery chamber, wherein the fine particles separated from air is recovered through the fine particle outlet and the dedusted air exit through the air outlet, as required in claim 20. Reconsideration and indication of the allowability of claim 20 and its dependent claims 21-22 are respectfully requested.

Claim 14 requires "recovering the fine materials in the recovery chamber (2) positioned coaxially with the rotary cage . . . separating the dedusted air and the fine particles

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and extraction of the latter to a means of conveyance." As discussed above, Hanke, Weit and Williams, on their own or combined, do not teach or suggest recovering the fine materials in the recovery chamber positioned coaxially with the rotary cage, wherein the dedusted air and the fine particles are separated as required in claim 14. Reconsideration and indication of the allowability of claim 14 are respectfully solicited.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Extension of Time and Fee Deficiency

The Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that the Applicant has inadvertently overlooked the need for a petition and fee for extension of time. If any additional fee is required, or any overpayment is made, in connection with this communication please charge or credit deposit account No. 50-3505.

Respectfully submitted,

/Sun Y. Pae/

Sun Y. Pae, Reg. No. 61401
Reinhart Boerner Van Deuren P.C.
2215 Perrygreen Way
Rockford, Illinois 61107
(815) 633-5300 (telephone)
(815) 654-5770 (facsimile)

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